(continued from page 11)

The ATSS Excellence in Test Support Award, presented to an ATSS employee or employees who demonstrate outstanding support of ATC, was awarded to **Carl E. Johnson**. Johnson was recognized for his unparalleled dedication and uncompromised work ethic in support of testing being conducted by the Military Environmental Technology Demonstration Center (METDC) for the Environmental Quality Technology Program and METDC's critical homeland defense efforts.

The ATSS Annual Safety Leadership Award for a group, presented to an ATSS group of employees who demonstrates outstanding safety practice and leadership was awarded to the Environmental Protection Agency (EPA) Support Team. The EPA Support Team, made up of **Kevin J. Kiger, Dr. Elizabeth Sagan, Christopher L. Shires** and **Stephen R. Tapp**, was recognized for their unparalleled dedication and contributions to the EPA Heavy Duty Diesel Engine Emissions Test.

The Team ATC – ATSS' Annual Hindman Driving Excellence Award, presented to an ATSS heavy truck driver who epitomizes the values and performance of Mr. Michael Hindman, was awarded to **Robert L. Barnhart**. Barnhart was recognized for his impeccable driving support during the M113A3 enhanced armor protection program. He worked long hours to ensure the test was completed on time and without incident.

Article provided by **Susan Hagan**, ATSS, ATC Public Affairs Liaison.

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In This Issue...

SSTF RIBBON CUTTING

From the ATC Commander

by Colonel John P. Rooney, Commander, Aberdeen Test Center

Col. John P. Rooney

Testing at ATC continues to be fast and furious. From January through June we fired more than four million rounds of small arms ammunition to prove out weapons systems. In March we broke the record for the most range clearances in a month – almost 600. Since August 2003, we've tested over 450 armor solutions in order to provide troops with better vehicle protection. In fact, the latest Interim Armor Kit was designed right here at ATC. Our efforts continue to make a huge difference in providing troops with safe, effective and reliable vehicles and equipment.

Improvised Explosive Devises (IEDs), sometimes referred to as roadside bombs, continue to be a threat to troops in theater. Recently, I traveled with a team to Iraq for several weeks in order to help educate senior leadership on armor protection and its capabilities and limitations. We gathered documentation and took photos of damage from emerging threats and even briefed Senior Army Leadership from Baghdad. This evidence helped to convince senior leadership to fund armor enhancements and move them to the top of the priority list for force protection. While in Iraq, we saw the need to help figure out better protection for our troops. ATC worked with the Army Research Laboratory to come up with an interim solution. Testing needs were directed from Iraq. An initial armor solution was developed and tested within a week and the final product is being fielded now. The response from theater has been tremendous. As a result of this project, ATC has placed a permanent member with ballistic experience on the Forward Operational Assessment team in order to be more responsive in theater.

Beginning in October, most of the ATC workforce was to transition from our current personnel system to the DoD Acquisition Workforce Personnel Demonstration Project, better known as AcqDemo. This has been placed on hold by Department of the Army as they consider expanding units transition into National Security Personnel System (NSPS). We should find out soon whether ATC will be part of this effort next year.

While we continue to conduct vital testing in support of the Global War on Terrorism, many other efforts continue to improve our ability to meet future testing requirements. The Michaelsville Range Complex Upgrade is coming along very well and should posture us for the small arms work that we have in the future. The Soldier Systems Test Facility at Mulberry Loop has made tremendous progress as testing continues during this construction. The Littoral Warfare Environment Facility is now operational and recently completed its explosive calibration tests. The Automotive Technology Evaluation Facility has progressed towards reality as the 35 percent design has been completed and the USMC 4th Combat Engineer Battalion spent this summer clearing trees and underbrush to prep the site. Many other initiatives are ongoing to improve our facilities and capabilities and our most valuable asset, the ATC workforce, continues to excel.

As always, thank you for your exceptional efforts in making sure our troops are provided with the safest, most effective and most reliable vehicles and equipment possible. What you do really does make a difference.

Wounded Warrior Provides Valuable Feedback to Testers

During a May 24 visit to the US Army Aberdeen Test Center (ATC), 1st Lt. Brennan Speakes, a platoon leader with A Troop, 1-71 Cavalry, 10th Mountain Division (Light Infantry), provided testers with valuable feedback based on his experiences in Iraq.

Speakes, who was wounded in Iraq when his M1114 High Mobility Multi-purpose Wheeled Vehicle (HMMWV) rolled over, has been an out-patient at Walter Reed Army Medical Center since March 2006.

During his visit he viewed current testing being conducted at ATC in support of troops deployed to Iraq and Afghanistan. More importantly, he provided testers with information on how Soldiers are using vehicles and equipment in the field.

While touring the Automotive Command Center, where vehicles are instrumented prior to being tested, Speakes provided input on the types of things that Soldiers are doing to their vehicles in Iraq, such as replacing parts and tightening loose bolts.

"That's the sort of thing that we don't necessarily find out about," said John Wallace, ATC's Technical Director. "Input from Soldiers such as 1st Lt. Speakes gives our engineers a glimpse of how the vehicles we are testing are repaired and maintained in Iraq."

First Lieutenant Brennan Speakes poses with Sgt First Class Richard Morgan, ATC's Noncommissioned Officer in Charge, in front of an Abrams tank at ATC's Munson Test Area.

Such input allows ATC to more effectively test vehicles and offer suggestions to Program Managers on ways to improve their vehicles.

Speakes also witnessed a mine shot on a HMMWV equipped with an armor kit. ATC has tested almost 430 armor kits since the beginning of the war in Iraq. He joked that it was much better to witness the event from the outside of the vehicle, rather than the inside.

"Everything I can think of that I'm interested in, you test here," Speakes commented. "This has been a great opportunity. When else is a lieutenant going to see things like this, or anyone for that matter, that isn't associated with Aberdeen?"

"Input from Soldiers such as 1st Lt. Speakes gives our engineers a glimpse of how the vehicles we are testing are repaired and maintained in Iraq."

John Wallace,
ATC's Technical Director

ATC, a subordinate test center to the Developmental Test Command and the Army Test and Evaluation Command, continues to provide support to the Warfighter in many ways.

"Our goal is to make sure everything we test is safe, effective and reliable," said Wallace.

Some of ATC's most notable achievements include testing the Stryker, the Army's newest vehicle, and designing, fabricating and testing slat armor, the cage like apparatus bolted to the Stryker to protect the vehicle from rocket propelled grenades. ATC also works 24 hours, seven days a week when necessary, testing armor kits for HMMWVs and other vehicles to provide troops with better protection from improvised explosive devices and other threats.

Article provided by **Susan Hagan**, ATSS, ATC Public Affairs Liaison.

ATC Globe

On the Cover

Col. John Rooney and Brig. Gen. James Moran proudly cut the ribbon in front of the Data Acquisition and Control Center to officially open the Soldier Systems Test Facility. Pictured are Sgt. Maj. Gregory Lunn, Lindsay Yowell, Rooney, Moran, Roger Brown, and John Ruhl.

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Commander *COL John P. Rooney*
Editor *Vonnie Hughey*
Technical Director *John R. Wallace*
Design *International Imaging Center*

ATC and PEO Soldier Hold Ribbon Cutting for Soldier Systems Test Facility

The Aberdeen Test Center (ATC) and Program Executive Office (PEO) Soldier held a ribbon cutting ceremony Feb. 15 to officially open the Soldier Systems Test Facility (SSTF).

Soldiers participating in the Distributed Test Event 5 (DTE5) clear a room in the Urban Operations Area of the Soldier Systems Test Facility.

Soldiers participating in the Distributed Test Event 5 (DTE5) move from one area to another in the Urban Operations Area of the Soldier Systems Test Facility.

Designed as a complex of independently-operating, state-of-the-art developmental test facilities, SSTF will address current and evolving test requirements for the Soldier-as-a-System and integration with other platforms.

"This ceremony officially opens an area that we've already been using to conduct vital testing in support of the Warfighter," said Col. John Rooney, ATC commander. "We will use the Soldier Systems Test Facility to ensure that we provide our troops at war with the best possible equipment in order to be successful in their mission."

Construction of the Soldier Systems Test Facility began in 2003, and is scheduled to be completed this calendar year. SSTF operations began in August 2005 with a large scale Distributed Test Event that demonstrated the capability of SSTF to link and conduct concurrent and integrated testing and share real-time data with other US military test centers and bases.

"It's been a great team effort here and I can't tell you how much I appreciate it," said Brig. Gen. James Moran, PEO Soldier. "I can't wait to see it [the Soldier Systems Test Facility] when it's finished."

SSTF consists of a Data Acquisition and Control Center, indoor and outdoor firing ranges, mission preparation buildings, Human Factors Engineering complex, multiplexed Urban Operations area and Test and Range Operations building.

The air, land and water access surrounding the Urban Operations is a unique range controlled area which permits and supports diverse mission capabilities employing a wide variety of platforms.

"The testing that we perform here will always ensure that America's products are the best in the world for our Soldiers," said Moran.

Article provided by **Susan Hagan**, ATSS, ATC Public Affairs Liaison.

Employees Honored at Annual Awards Ceremony

At a recent annual awards ceremony, ATC recognized employees who have made significant contributions to ATC during the past year. ATC presented awards to 31 government and contractor employees, high-lighting group and individual achievements.

"What I want to do today is recognize those individuals who have excelled in what we've asked them to do," said Col. John Rooney, ATC commander. "For every one that we recognize, there are lots of people behind them, and the nomination process that came forward was not an easy decision as to who the winners were, and how we were going to decide the winners."

The Commander's Quality Award, presented to an ATC work group or team for sustained high achievements, was awarded to the Chemical Analysis Sampling Team, made up of **John Courts, Judith Galloway, Paul Marsh, Gwendolyn McKinney, James Sellare, Kathleen Swam, Bridgett Harris, Valerie Young** and **Tasha Merritte**. The team implemented a quality system based on ISO Guide 17025, resulting in accreditation in the area of petroleum, oils, lubricants and fuels. The ATC Chemistry Laboratory is now listed in a national database identifying it as an accredited laboratory.

The Groak Award, which recognizes employees providing various types of test support, without which the ATC technical mission could not be accomplished, was presented to **Larry O. Evans**. Evans' ability to organize and execute a wide variety of critical tasks has permitted missions to be met and equipment to be released to the war effort in an optimal and timely manner.

The Crozier Award, presented to a Soldier for excellence in technical test project management and test support, was awarded to **Sgt. First Class Reginald Freeman**, the primary accuracy shooter in the XM8 developmental test program. His insight into the tactics, techniques, and procedures for the way the weapon system was to be deployed in a tactical environment provided the project manager with valuable insight into how to improve the weapon system.

The Fritter Award, presented for exceptional contributions by employees whose jobs provide

administrative support to ATC, was awarded to **Michael Knoblauch**. Knoblauch's extensive knowledge and understanding of all aspects of the federal budget processes have made him a widely recognized authority in his field.

The Nichols Award, which recognizes the effort of ATC technicians, without whom the ATC

technical mission could not be accomplished, was awarded to **Jay Andrews**. His support and conduct of the many tests for the Multi-Role Anti-Armor Anti-Personnel Weapon System and the AT4CS Weapon System has involved him in the development of new munitions for the system.

The Technical Directors Award, which recognizes authors within ATC for outstanding technical papers or reports on topics pertinent to the Test and Evaluation community, was awarded to **Wayne T. Strine**. He developed a prototype test report format that provides test

(continued on page 11)

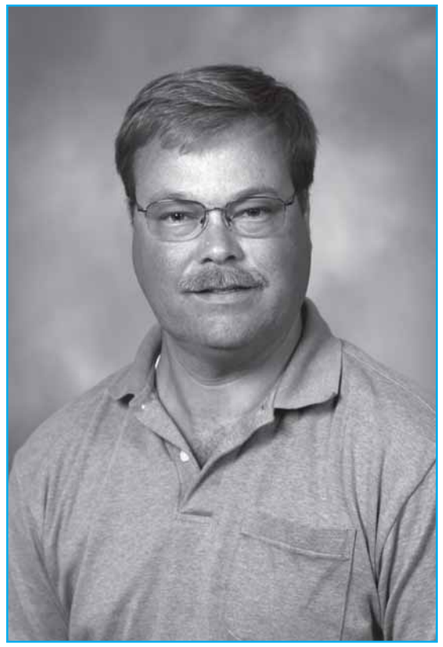
Congratulations to Paul Durkin! ATEC Engineer of the Year

Paul J. Durkin, an Aberdeen Test Center (ATC) mechanical engineer, was recently selected as the US Army Test and Evaluation Command (ATEC) nominee for the 2006 National Society of Professional Engineers (NSPE) Engineer of the Year. He was one of 23 professional engineers that were eligible to compete and be selected as the top 10 finalists and, subsequently, the 2006 Federal Engineer of the Year.

The NSPE award program recognizes outstanding engineers employed in the federal government. A panel of judges selects the Federal Engineer of the Year based on education, continuing education, professional and technical society activities, awards and honors, civic and humanitarian activities, and engineering achievements.

Durkin did not move on as one of the top 10 finalists; however, he was honored during the 27th Annual Federal Engineer of the Year Banquet at the National Press Club in Washington, D.C., held on February 23, 2006 by receiving a plaque from the Army Test and Evaluation Command in recognition for being the ATEC 2006 Engineer of the Year.

Durkin's nomination and selection was based on his lead with the Barrel Reshape Initiative at ATC for the Army Research Laboratory (ARL). This initiative sought to improve the overall Abrams fleet accuracy by reducing tube-to-tube variability through reshaping all tank gun barrels into a single centerline shape. Durkin planned, executed and reported on the test results of



this important effort. He and his team fired over 2,000 main gun rounds at ATC's Trench Warfare Range, which revealed the first round hit probability increased by 40-50 percent. He continues to work as a team with ARL to develop and test mobile machine reshape gun tubes in the field. The end result of this important program will be American Tanks that are capable of delivering more accurate fire, making US forces more effective and US Soldiers safer from enemy fire.

Durkin mentors the engineers and technicians working with him. He goes to great effort to give them opportunities to learn and to expand their experience through cross-training and increasing levels of responsibility.

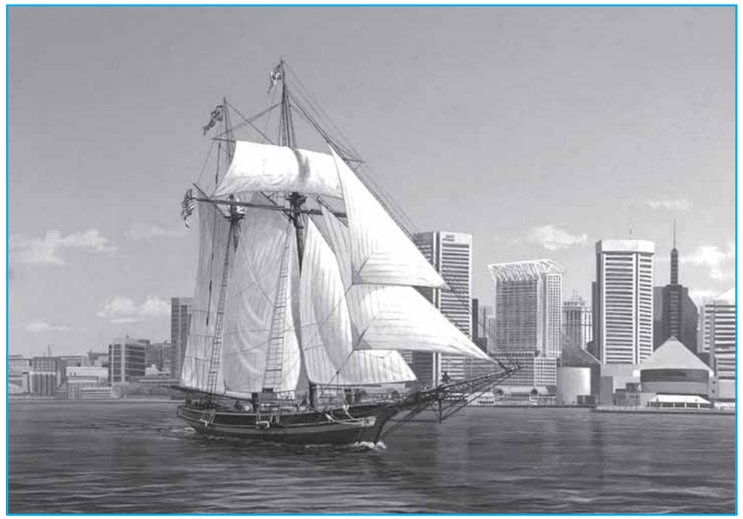
He is a recognized expert on tank ammunition and fire control systems. Engineers, scientists, test directors and other members of the Armor community seek his knowledge and expertise. His contributions are of great value to the Army in the form of accurate, reliable tanks and tank ammunition.

He has also been recognized for his efforts by being awarded the 2004 US Army Materiel Command Army Research and Development Achievement (RDA) Award. The RDA recognizes scientists and engineers who have distinguished themselves through their proven scientific and technical excellence and whose individual contributions promise to improve the Army's capability, and to enhance the Army's Transformation from the Current to the Future Force.

Article provided by **Vonnie Hughey**, Command Staff.

United Way of Central Maryland Recognizes Local Artist

The United Way of Central Maryland recently awarded Chris White with the National Community Service Award for his involvement with the Combined Federal Campaign (CFC).



On Feb. 23 he was invited to the United Way of Central Maryland Board of Directors meeting where they presented him with a memento in appreciation of his involvement with the CFC. Board Chair Bernie Cook thanked White for his generosity and community spirit.

White also received the National Community Service Award from the United Way for his continued support of the CFC.

White is an award-winning artist, as well as a Federal employee with over 25 years of service to the Government. He is a graphic artist in our International Imaging Team at ATC.

For eight years, Maryland artist Chris White has shared his talent with the leadership donors of the CFC. The framed, signed prints captured both the spirit of US federal employees and the spirit of the CFC.

This print, "Baltimore's Pride, Maryland's Own," by White was the last in the series of Maryland scenic prints.

The painting shows the Pride II with most of her sails aloft as she leaves the Inner Harbor, following the Patapsco River to the Chesapeake Bay. Predominant in the skyline is Baltimore's World Trade Center. Besides housing the offices of The Pride, Inc. (the non-profit organization that oversees operation of The Pride of Baltimore II for the people of Maryland), the Trade Center is a symbol of the Port's, and Maryland's, importance in international commerce. The clear autumn sky is a symbolic wish of smooth sailing and full sails for the crew of The Pride II.

The Print was available only to Gold and Gold Plus level donors (large donations) to the Central Mary-land CFC. The Gold Level Incentive was a 16" x 20" framed, signed and numbered limited edition print of an edition of 350. The Silver Level Incentive was an 8 ½" x 11" framed, signed and numbered edition of 1,500. These prints are unique to the Central Maryland CFC, and are their way of sincerely thanking people for their thoughtfulness and generosity.

As the world's largest and most successful annual workplace giving campaign, each year, more than 300 CFC campaigns throughout the country and internationally help to raise millions of dollars. Pledges made by Federal civilian, postal and military donors during the campaign season (Sept. 1st to Dec. 15th) support eligible non-profit organizations that provide health and human service benefits throughout the world.

Article provided by **Vonnie Hughey**, Command Staff.

Blast Overpressure Measurement for CFD Model Validation in the Development of Large Caliber Gun Systems

This report discusses methods used and results obtained in the multiple phases of Blast Overpressure testing for the 120 MM XM360 Gun Assembly. It will be shown that techniques developed during arena testing led to refined methodology for the collection of specific Blast Overpressure data with regards to the test article. That data has and will be used to develop and analyze the effectiveness of competing cannon designs, to refine and validate Computational Fluid Dynamics (CFD) models of large-caliber muzzle blast, and to reduce development time for vehicle hull design through valid simulation; all of which will be of great value to the overall development of the system.

Simulation Prior to Test

Throughout the last decade, modeling and simulation has become a vital tool for program managers to reduce risk and achieve savings in both cost and schedule. The ability to simulate both developmental and operational scenarios prior to a system's full-scale testing is integral to any development model and consistent with modern engineering best practices.

However, in order for simulation to be beneficial, items under test must be characterized, such that computer models accurately reflect the physical properties and performance of the components. This means understanding the blast overpressure signature both in the free space surrounding the muzzle and on the surface of the vehicle's hull. Figure 1 clearly shows the environment in which we are working.

Figure 1: Prototype 120mm Cannon and muzzle blast from typical munitions.

Through CFD modeling, Benet Labs has begun to apply modern commercial codes, such as Fluent, to full vehicle and partial vehicle 3-D models to determine the effects of various cannon designs. In order to refine and validate these models, however, actual testing must be performed. Data gathered during that testing is compared to predicted values and new techniques are developed to improve accuracy. Output such as in Figure

Figure 2: CFD output showing peak blast overpressure levels. (Courtesy: Dan Cler, et al., of Benet Labs)

2 aids the design engineer in determining the effectiveness of new designs.

Free Field Blast Overpressure Measurement

Prior testing, including a blast overpressure arena test, has shown that when the origin of blast is known, the preferred sensor geometry for incident (i.e. side-on) pressure is the "pencil" probe. This probe provides a clean surface such that the blast wave is able to travel smoothly across the sensor's element, located flush on the top surface and set back several inches from the leading edge. Figure 3 shows this probe installed at the test range.

Figure 4 shows a typical blast overpressure signal, compared to the also common "blunt cylinder" geometry. It can be seen that the

Figure 3: Pencil probe from side and front. Clamp is non-conductive nylon.

blunt cylinder produces a false peak compared to theoretical values. This mounting geometry has its benefits, however, particularly when the origin of blast is not well defined, or when multiple blast wave reflections are expected (environments such as the interior of a vehicle).

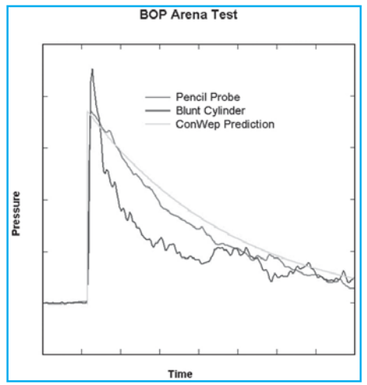


Figure 4: Arena testing supports pencil probe geometry for this style of measurement.

The next challenge is aiming these probes at the source of blast. With muzzle blast, the origin and free surface orientation of the blast wave front is not spherical as it is in arena testing. As a result, a rough approximation of the origin of the blast is just in front of the muzzle of the cannon. Because of this uncertainty in the direction of the blast wave, the probe angle may be off from 10 or moredegrees as indicated from CFD modeling. Figure 5 shows the overall configuration of pencil probes with relation to the cannon.

Figure 5: Bird's eye view of sensor arrangement for free field BOP measurement.

The placement of sensors may be accomplished quite simply by an individual or a crew of two. Geodetic surveys mark spots on the ground above which the sensor should be located. These are in the form of nails driven into the asphalt and then circled with orange paint as can be seen in Figure 5.

Figures 6 and 7 show a plug that is inserted into the muzzle end, from which a length of filament (fishing line, piano wire, etc.) is strung. The filament is pulled taut between the muzzle and the farthest sensor location. Between the filament and a plumb bob, the sensors can be located to within an inch of their desired location, and oftentimes better.

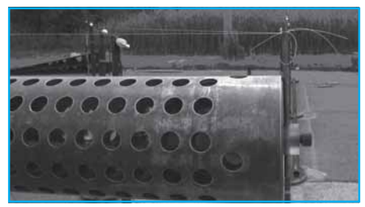


Figure 6: Muzzle plug and filament.

Figure 7: Looking down the filament to aid alignment of sensors.

It is worthy to note, however, that for CFD model validation, the sensors are not required to be perfectly spaced. Rather, it is far more important to know where they actually are. This is determined by follow-on geodetic surveys to confirm their locations and/or record discrepancies which can later be compensated for in the CFD model.

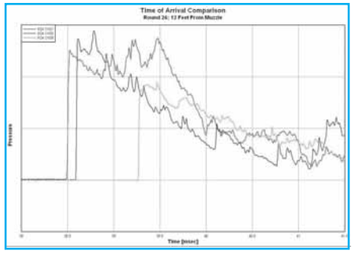


Figure 8: Time of arrival around 12 foot radius indicates accurate placement of sensors.

Data from the firing of various rounds indicates the accuracy of placement. Figure 8 is a typical pressure versus time plot generated by one "radius" of these pencil probes. Each sensor is located 12 feet from the muzzle; however the angle varies from 90° to 120° and then nearly 180° backwards. As expected, the first two sensors feel the blast wave first, and their timing is extremely close (within 0.095 msec). This level of accuracy helps the design engineer by providing a reliable measure of blast wave velocity. Additionally, peak levels are in close agreement. The third sensor is not hit with blast until approximately 0.75 msec later, as the blast must work its way out of the muzzle before turning backwards towards that position.

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Moving out to the 40-foot radius, a similar relationship is observed. Figure 9 shows all four sensors record the blast wave arriving within 2 msec of each other. The two sensors closest to being perpendicular with the muzzle record blast wave arrival time within 0.34 msec.

Figure 11: Hull mockup with blast overpressure sensor array.

Finally, we may also look at a group of sensors along one "arm" of the free field array. Figure 10 shows the rate at which the blast wave decays with distance, as well as allowing the design engineer to calculate velocity and impulse.

Vehicle Hull Blast Overpressure Measurement

The next step in acquiring data for CFD model validation is determining what loading the blast overpressure applies to proposed hull geometry. As opposed to the incident blast measurements made in the free-field, these measurements are reflected (i.e. face-on) or at some angle between side-on and face-on. A multitude of sensors were placed flush with the vehicle hull, as can be seen in Figure 11.

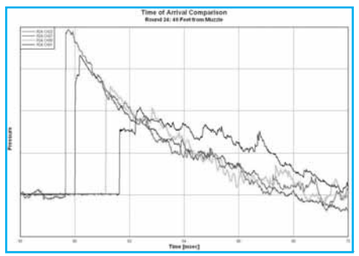

Figure 9: Time of arrival around 40 foot radius further indicates placement accuracy.

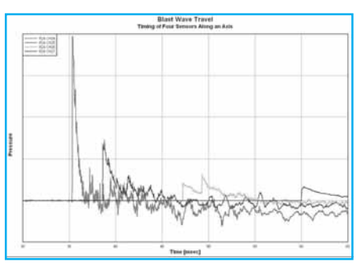

Figure 10: Blast wave travel along an arm of the free field sensor array.

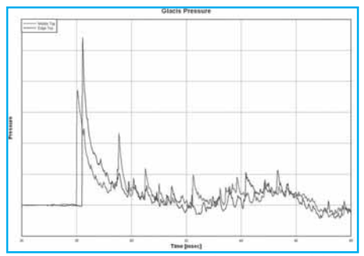

Figure 12: Pressure plot near middle on top, near edge on top.

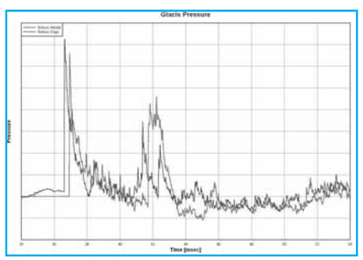

Figure 13: Pressure plot in front, showing higher peak due to ground reflection of blast.

It can be seen in Figures 12 and 13 that there is a significant reflected pressure on the lower portion of the glacis. Therefore, it is advantageous to design cannon and vehicle hulls in conjunction, to reduce the damaging affects of this blast.

Conclusions

In summation, the techniques for blast overpressure measurement outlined here are the culmination of efforts made over two years of theory, trial and refinement. The requirements for accuracy and reliability associated with CFD model validation mandate this effort. Data acquired are and will continue to be used to develop models that in turn will drastically reduce cost and development time for future weapons systems.

In summation, the techniques for blast overpressure measurement outlined here are the culmination of efforts made over two years of theory, trial and refinement.

For more information contact **Peter L. Silver** at DSN298-0570, commercial 410-278-0570, e-mail peter.silver@atc.army.mil. This paper was presented at the March 2006 Gun and Missile Conference held in Sacramento, Calif. ●

(continued from page 5)

directors and ATC customers numerous advantages by making the document more user-friendly.

The Commander's Award, presented to an ATC civilian or Soldier for outstanding individual achievement on a technical project or study resulting in significant advances in testing technology or outstanding project management, was awarded to **Thea C. Blunt-Henderson**. She serves as the lead developer of the Versatile Information System Integrated ONline (VISION) Digital Library System, as well as exercising managerial oversight and responsibility.

The Individual Safety Award recognizes performance by an ATC civilian or military employee that sets an example to fellow employees by continually demonstrating safe work habits and an excellent attitude towards safety, or employee performance of specific actions that created safe working conditions and enhanced the safety environment in the workplace. The Individual Safety Award was awarded to **Steven Benjamin**. His knowledge and management directly impacts every test and every training exercise conducted on ATC ranges, water and airspace.

The Group Safety Award recognizes performance by a group of ATC employees that have demonstrated continuous, outstanding and significant contributions to the safety program by providing personnel with safety training, hazard identification and abatement, accident prevention efforts, and improvements in the occupational health environment of the workplace. The Group Safety Award was awarded to the Expeditionary Fighting Vehicle (EFV) Test Team, made up of **Samantha Berti, Timothy Bouchelle, Douglas Griffin, Bill Mullis, Robert Puckett** and **Robert Wirtanen**. Through constant emphasis on safe operations and adherence to ATC safety standards, the EFV team has successfully managed their program with no accidents or injuries.

In addition to presenting the annual awards, Col. John Rooney, ATC commander, presented commander's coins to two ATC Employees who were recipients of the **Harford County Disability Employee of the Year award**, given by the Harford County Committee on Employment of people with disabilities to an individual with a disability who has exhibited exceptional ability and determination in entering or re-entering the workforce in Harford County.

The 2004 winner was **Deana Boyd**, a highly competent technical administrator and an excellent computer based forms, graphics designer and web developer. She has been involved in the ATC and APG Disability Program for over 10 years and serves as a co-chair on the APG Disability Committee.

The 2005 winner was **Tom Martin**, a lead technician at the Electromagnetic Interference Test Facility responsible for ensuring that equipment is in compliance with the established military specifications before being used in a combat environment. He has volunteered at APG in writing a newsletter concerning 'overcoming disabilities' and 'technology helps disabled in performing their jobs'.

Aberdeen Test Support Services (ATSS), one of the main mission support contractors at ATC, presented four awards to ATSS employees.

The ATSS Annual Safety Leadership Award, presented to an ATSS employee who demonstrates outstanding safety practice and leadership was awarded to **Robert K. Towson**. Towson was recognized for his constant enthusiasm and leadership towards the ATC/ATSS safety program.

(continued on page 12)